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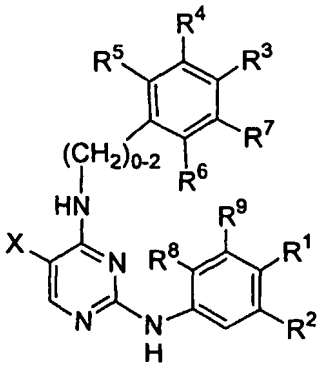
(54) Title: 2-4-(DI-PHENYL-AMINO)-PYRIMIDINE DERIVATIVES USEFUL FOR TREATING HYPER-PROLIFERATIVE DISORDERS



(I)

(57) Abstract: The present invention relates to a 2-4-(diphenyl-amino)-pyrimidinyl compound of Formula I useful for treating hyper-proliferative disorders.

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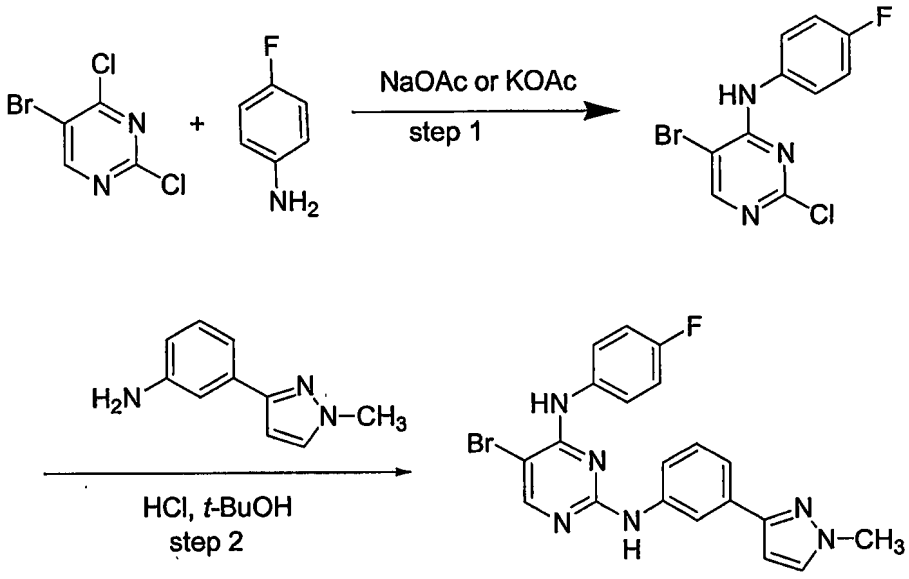
Preparation of Specific Compounds of the Invention

Example 1

Methods 1a, 1b, 1c, and 1d

Preparation of *N*-{5-bromo-4-[(4-fluorophenyl)amino]-2-pyrimidinyl}-*N*-[3-(1-methyl-1*H*-pyrazol-3-yl)phenyl]amine



Step 1. Two methods were used:

Method 1a. To a solution of NaOAc (27.0 g, 330 mmol) in water (70 mL) and THF (140 mL) , were added 5-bromo-2,4-dichloropyrimidine (25.0 g, 110 mmol) and 4-fluoroaniline (12.2 g, 110 mmol). The mixture was stirred at room temperature for 18 h then saturated $NaHCO_3$ solution (50 mL) was added and the aqueous layer was extracted with EtOAc (150 mL × 2); the combined organic layers were dried over $MgSO_4$; filtered and concentrated under reduced pressure. The residue was treated with 200 mL hexane and filtered to give 5-bromo-2-chloro-4-[(4-fluorophenyl)amino]-pyrimidine as a 30.0 g pale yellow powder (90%).

Method 1b .To a solution of K_2CO_3 (44.5 g, 322 mmol) in water (125 mL) and *I*-PA (375 mL), were added 5-bromo-2,4-dichloropyrimidine (25.0 g, 108 mmol) and 4-fluroaniline (12.0 g, 107 mmol). The mixture was stirred at room temperature for 18 h then water (3000 mL) was added and the product was precipitated out. Filtered and dried to give 30.0 g (90%) 5-bromo-2-chloro-4-[(4-fluorophenyl)amino]-pyrimidine as a pale yellow powder.